

## WEST Search History





DATE: Friday, August 25, 2006

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L12	L9 with cleaning	9
<input type="checkbox"/>	L11	L9 with shockwave with cleaning	0
<input type="checkbox"/>	L10	L9 with shockwave with cleaning with boiler	0
<input type="checkbox"/>	L9	inspection camera	305
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L8	7011047.pn.	1
		<i>DB=PGPB,USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L7	L6 and shockwave	2
<input type="checkbox"/>	L6	(134/116 or 134/137 or 134/140 or 134/164 or 134/166R or 134/167R).ccls. and (inspect\$ or detect\$ or sens\$) and (boiler or (heat exchanger) or (fuel burning facility)) and cleaning	48
<input type="checkbox"/>	L5	(134/116 or 134/137 or 134/140 or 134/164 or 134/166R or 134/167R).ccls. and (inspect\$ or detect\$ or sens\$) and (boiler or (heat exchanger) or (fuel burning facility))	50
<input type="checkbox"/>	L4	L3 and shockwave	1
<input type="checkbox"/>	L3	l1 and (134/116 or 134/137 or 134/140 or 134/164 or 134/166R or 134/167R).ccls.	5
<input type="checkbox"/>	L2	L1 with cleaning	10
<input type="checkbox"/>	L1	inspection camera	520

END OF SEARCH HISTORY

## Hit List

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Fwd Refs

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**Search Results - Record(s) 1 through 9 of 9 returned.**

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☐ 1. Document ID: JP 10337544 A

L12: Entry 1 of 9

File: JPAB

Dec 22, 1998

PUB-NO: JP410337544A

DOCUMENT-IDENTIFIER: JP 10337544 A

TITLE: WATERWAY INSPECTION DEVICE

PUBN-DATE: December 22, 1998

## INVENTOR-INFORMATION:

NAME

COUNTRY

SHIGEMITSU, HIROAKI

TSUNEWAKI, HIROSHI

TAKAMI, HIDEAKI

INT-CL (IPC): B08B 3/02; F16L 55/18

## ABSTRACT:

PROBLEM TO BE SOLVED: To provide a device in which a series of operations such as a cleaning operation, inspection operation, repairing operation can be performed by means of one running vehicle and also an appurtenant operation such as a carrying-in, carrying-out operation can be completed at a time.

SOLUTION: A cleaning nozzle 9 for spraying water is mounted on a work stage 7 to clean an object 1 to be inspected, a water feed device is mounted on an expandable arm frame 5, a cleaning device 13 is provided under a running vehicle 2 to remove soil and sand accumulated on the underside of the object to be inspected, and a control device to control these devices is attached to the vehicle 2, while an inspection camera 8 for inspecting the inner surface of the object 1 is mounted to the forward end of an expandable arm 6. A control device for a monitor and the camera 8 is disposed at an driver's seat of the vehicle, and a work stage 7, which a user can get on for detailed inspection, is attached to the forward end of the arm 6 and also a maintenance box 14 for storage of repair materials and tools is provided.

COPYRIGHT: (C)1998, JPO

Full

Title

Citation

Front

Review

Classification

Date

Reference

Sequence

References

Claims

RWD

Drawings

☐ 2. Document ID: JP 09314814 A

L12: Entry 2 of 9

File: JPAB

Dec 9, 1997

PUB-NO: JP409314814A  
DOCUMENT-IDENTIFIER: JP 09314814 A  
TITLE: CLEANING DEVICE AND CLEANING METHOD

PUBN-DATE: December 9, 1997

## INVENTOR-INFORMATION:

NAME	COUNTRY
SARASHINA, EIGO	
TAKAHASHI, MASARU	
MASUI, MASUO	
NAITO, TAKAO	

INT-CL (IPC): B41F 35/00

## ABSTRACT:

PROBLEM TO BE SOLVED: To surely remove cream solder left in the openings of a screen mask in a printing equipment, with which printing material is printed and applied through a printing screen mask having the openings formed in the predetermined pattern onto a surface to be printed.

SOLUTION: An air sucking mechanism 19 is so constituted as to control its flow rate by a flow rate controlling part 20. After the tip of an air sucking part 15 is brought into contact with a screen mask 5 by being lifted, air suction is started to the opening part of the screen mask 5 by means of the air sucking mechanism 19 for performing cleaning. By confirming the cream solder 4 left in the opening part after cleaning with an inspection camera 24 and controlling the flow rate of sucking air, the cream solder 4 left in the opening part of the screen mask 5 can surely be removed.

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	Keywords	Drawings
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☐ 3. Document ID: JP 06071868 A

L12: Entry 3 of 9

File: JPAB

Mar 15, 1994

PUB-NO: JP406071868A  
DOCUMENT-IDENTIFIER: JP 06071868 A  
TITLE: CLEANING DEVICE FOR CREAM SOLDER PRINTING MACHINE

PUBN-DATE: March 15, 1994

## INVENTOR-INFORMATION:

NAME	COUNTRY
OKANOUE, KAZUE	
SATO, SHOJI	
ISHIMOTO, KAZUMI	
ONISHI, HIROAKI	

INT-CL (IPC): B41F 35/00; B41F 15/08; H05K 3/12; H05K 3/34

ABSTRACT:

PURPOSE: To offer an excellent cleaning device for a cream solder printing machine, in which a problem of clogging at a mask opening and defective printing caused by uneven coating of printing material are solved.

CONSTITUTION: A cleaning device has an air blowing port 9 which is arranged on one side of a mask 5 and an air suction port 11 which is arranged on the other side, and is equipped with a mask opening state inspection camera 21 to inspect the clogging state of a mask opening 6 in an inspection step after a cleaning step. The cleaning step is repeatedly carried out depending upon the clogging state, and when the cleaning step is repeated a specified number of times, an alarming device is activated. Thus, an excellent cleaning device for a cream solder printing machine, by which defective printing caused by clogging at the mask opening 6 can be eliminated, is obtained.

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Full	Title	Citation	Front	Review	Classification	Date	Reference	References	Attachments	Claims	RMK	Draw
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☐ 4. Document ID: DE 10255221 A1

L12: Entry 4 of 9

File: EPAB

Jun 17, 2004

PUB-NO: DE010255221A1

DOCUMENT-IDENTIFIER: DE 10255221 A1

TITLE: Pipework unit for maintenance inspection of pipework and cleaning pipework has an integrated inspection camera and pipe-cleaning jet

PUBN-DATE: June 17, 2004

INVENTOR-INFORMATION:

NAME

COUNTRY

RIEZLER, PASCAL

DE

INT-CL (IPC): B08B 9/053; F16L 55/18; G03B 37/00

EUR-CL (EPC): B08B009/04; B08B009/04, E03F007/12 , G01M003/38 , G03B037/00

ABSTRACT:

CHG DATE=20041005 STATUS=O>A pipework unit has a Pelton water turbine (17) integrated in a casing (2) for converting kinetic energy in pressurized water into electric power. It has LEDs (12) as a lighting device. The captured electric power feeds an inspection camera and the LEDs. The turbine has a generator (18).

Full	Title	Citation	Front	Review	Classification	Date	Reference	References	Attachments	Claims	RMK	Draw
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☐ 5. Document ID: DE 10255221 B4, DE 10255221 A1

L12: Entry 5 of 9

File: DWPI

Apr 21, 2005

DERWENT-ACC-NO: 2004-482056  
DERWENT-WEEK: 200527  
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TITLE: Pipework unit for maintenance inspection of pipework and cleaning pipework  
has an integrated inspection camera and pipe-cleaning jet

INVENTOR: RIEZLER, P

PRIORITY-DATA: 2002DE-1055221 (November 27, 2002)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10255221 B4	April 21, 2005		000	B08B009/053
DE 10255221 A1	June 17, 2004		008	B08B009/053

INT-CL (IPC): B08B 9/053; F16L 55/18; G03B 37/00

ABSTRACTED-PUB-NO: DE 10255221A  
BASIC-ABSTRACT:

NOVELTY - A pipework unit has a Pelton water turbine (17) integrated in a casing (2) for converting kinetic energy in pressurized water into electric power. It has LEDs (12) as a lighting device. The captured electric power feeds an inspection camera and the LEDs. The turbine has a generator (18).

USE - For maintenance inspection of pipework and cleaning pipework.

ADVANTAGE - This pipework unit can operate without cables and is designed in such a way that it is suitable to be used in pipes with a small diameter.

DESCRIPTION OF DRAWING(S) - The drawing shows a cross-section diagram of the present invention.

Casing 2

LED 12

Pelton water turbine 17

Generator 18

Turbine inlet pipe 19

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIGS	Draw. Des
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☐ 6. Document ID: JP 10337544 A

L12: Entry 6 of 9

File: DWPI

Dec 22, 1998

DERWENT-ACC-NO: 1999-113916  
DERWENT-WEEK: 199910  
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TITLE: Channel inspection apparatus - has flexible arm provided with workstage on which inspecting person is able to move freely to perform detailed inspection at interior of inspection object, using tool box

PRIORITY-DATA: 1997JP-0147850 (June 5, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 10337544 A	December 22, 1998		007	B08B003/02

INT-CL (IPC): B08B 3/02; F16L 55/18

ABSTRACTED-PUB-NO: JP 10337544A

BASIC-ABSTRACT:

NOVELTY - An inspection object (1) is initially cleaned with water by pouring water from a nozzle (9) mounted on a work stage (7). A cleaning unit (13) mounted at the base of an inspection vehicle (2) is used for removing the sand deposited on the object. The vehicle is provided with a controller (17) which controls the water supply and cleaning units. Inspection camera (8) is used to inspect the interior of the object to be inspected. A flexible arm (6) is provided, which has a work stage on which an inspecting person is able to move and perform detailed inspection.

DETAILED DESCRIPTION - A water supplier (4) is provided in a flexible arm frame (5). The inspection camera and the controller are provided near the driver's seat. A maintenance box (14) is provided, which contains the tools needed for repairing.

USE - For use in interior repair and maintenance works of tunnel.

ADVANTAGE - Enables to inspect the interior portion also since inspection camera uses infrared rays. Enables to remove stains in the interior portion by injecting water. Enables to collect the water along with the sludge. DESCRIPTION OF DRAWING

(S) - The figure shows the perspective view of the channel inspection apparatus. (1) Inspection object; (2) Inspection vehicle; (4) Water supplier; (5) Flexible arm frame; (6) Flexible arm; (7) Work stage; (8) Inspection camera; (9) Cleaning nozzle; (13) Cleaning unit; (14) Maintenance box; (17) Controller.

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWOC	Draw Da
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☐ 7. Document ID: CN 1184073 C, WO 9745268 A1, JP 09314814 A, CN 1219908 A, EP 956952 A1, KR 2000016053 A, US 6217669 B1, EP 956952 B1, DE 69715254 E

L12: Entry 7 of 9

File: DWPI

Jan 12, 2005

DERWENT-ACC-NO: 1998-032444

DERWENT-WEEK: 200625

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TITLE: Cleaning apparatus for PCB manufacturing screens - has upper end of air sucker contacted screen mask (5) so that air is sucked with respect to opening of mask to perform cleaning operation

INVENTOR: MASUI, M; SARASHINA, E ; TAKAHASHI, K ; NAITO, T

PRIORITY-DATA: 1996JP-0132913 (May 28, 1996)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>CN 1184073 C</u>	January 12, 2005		000	B41F035/00
<u>WO 9745268 A1</u>	December 4, 1997	J	022	B41F035/00
<u>JP 09314814 A</u>	December 9, 1997		006	B41F035/00
<u>CN 1219908 A</u>	June 16, 1999		000	B41F035/00
<u>EP 956952 A1</u>	November 17, 1999	E	000	B41F035/00
<u>KR 2000016053 A</u>	March 25, 2000		000	B41F035/00
<u>US 6217669 B1</u>	April 17, 2001		000	B08B005/04
<u>EP 956952 B1</u>	September 4, 2002	E	000	B41F035/00
<u>DE 69715254 E</u>	October 10, 2002		000	B41F035/00

INT-CL (IPC): B08B 5/04; B08B 7/04; B41F 35/00

ABSTRACTED-PUB-NO: EP 956952B

## BASIC-ABSTRACT:

A printing material is printed on and applied to an object surface via a printing screen mask provided with an opening of a predetermined pattern. Cream solder remaining in the opening of the screen mask is removed reliably. A flow rate of the air in an air suction mechanism (19) can be controlled by a flow rate controller (20). After an air sucker (15) has moved up, so that an upper end thereof has contacted the screen mask (5), the sucking of the air is started with respect to the opening (6) of the screen mask (5), such that a cleaning operation is carried out.

The residual cream solder (4) in the opening (6) is examined by an inspection camera (2) after the completion of this cleaning operation, and a cleaning operation is carried out again with the flow rate of the suction air controlled in accordance with the results of the examination.

ABSTRACTED-PUB-NO:

US 6217669B EQUIVALENT-ABSTRACTS:

A printing material is printed on and applied to an object surface via a printing screen mask provided with an opening of a predetermined pattern. Cream solder remaining in the opening of the screen mask is removed reliably. A flow rate of the air in an air suction mechanism (19) can be controlled by a flow rate controller (20). After an air sucker (15) has moved up, so that an upper end thereof has contacted the screen mask (5), the sucking of the air is started with respect to the opening (6) of the screen mask (5), such that a cleaning operation is carried out.

The residual cream solder (4) in the opening (6) is examined by an inspection camera (2) after the completion of this cleaning operation, and a cleaning operation is carried out again with the flow rate of the suction air controlled in accordance with the results of the examination.

A printing material is printed on and applied to an object surface via a printing screen mask provided with an opening of a predetermined pattern. Cream solder remaining in the opening of the screen mask is removed reliably. A flow rate of the air in an air suction mechanism (19) can be controlled by a flow rate controller (20). After an air sucker (15) has moved up, so that an upper end thereof has contacted the screen mask (5), the sucking of the air is started with respect to the opening (6) of the screen mask (5), such that a cleaning operation is carried out.

The residual cream solder (4) in the opening (6) is examined by an inspection camera (2) after the completion of this cleaning operation, and a cleaning operation is carried out again with the flow rate of the suction air controlled in accordance with the results of the examination.

WO 9745268A

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	Keywords	Drawings
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□ 8. Document ID: EP 638371 A1, DE 69409883 E, AU 9470206 A, BR 9403214 A, ZA 9406010 A, US 5503033 A, NZ 264205 A, JP 08270208 A, CN 1108203 A, AU 679239 B, EP 638371 B1

L12: Entry 8 of 9

File: DWPI

Feb 15, 1995

DERWENT-ACC-NO: 1995-132371

DERWENT-WEEK: 199828

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TITLE: Method of servicing interior of large container with small access opening - includes providing collapsible service device, inserting this device while in collapsed condition through opening, and deploying service device to rotate maintenance tools round tank inside wall

INVENTOR: VAN NIEKERK, E

PRIORITY-DATA: 1994ZA-0003039 (May 3, 1994), 1993ZA-0005806 (August 10, 1993), 1994JP-0188646 (August 10, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>EP 638371 A1</u>	February 15, 1995	E	014	B08B009/08
<u>DE 69409883 E</u>	June 4, 1998		000	B08B009/08
<u>AU 9470206 A</u>	February 23, 1995		000	B08B009/087
<u>BR 9403214 A</u>	April 11, 1995		000	B08B009/08
<u>ZA 9406010 A</u>	May 31, 1995		037	B08B000/00
<u>US 5503033 A</u>	April 2, 1996		012	B08B009/00
<u>NZ 264205 A</u>	July 26, 1996		000	B08B009/08
<u>JP 08270208 A</u>	October 15, 1996		011	E04G001/36
<u>CN 1108203 A</u>	September 13, 1995		000	B65D090/48
<u>AU 679239 B</u>	June 26, 1997		000	B08B009/087
<u>EP 638371 B1</u>	April 29, 1998	E	019	B08B009/08

INT-CL (IPC): B08B 0/00; B08B 9/00; B08B 9/08; B08B 9/087; B63B 57/02; B65D 90/10; B65D 90/48; B66B 0/00; B66F 0/00; E04G 1/36; E04G 3/10

ABSTRACTED-PUB-NO: EP 638371A

BASIC-ABSTRACT:

The method includes providing a collapsible service device (110) for servicing interior of a large circular container or tank (112). The device has a central mast having a sliding collar with hinged radial arms which can be folded up against the mast allowing the assembly to be inserted through the access opening.



The collar and arms can be raised or lowered on the mast and rotated to run brushes, cleaning jets, inspection cameras, or testing equipment, round the inside surface of the tank wall. The device is operated from inside the tank, or by remote or computerised control.

USE/ADVANTAGE - For maintaining large vessels in the food, chemical, and petrochemical industries. The equipment is operable without men having to enter a vessel containing toxic material or gases.

ABSTRACTED-PUB-NO:

EP 638371B EQUIVALENT-ABSTRACTS:

The method includes providing a collapsible service device (110) for servicing interior of a large circular container or tank (112). The device has a central mast having a sliding collar with hinged radial arms which can be folded up against the mast allowing the assembly to be inserted through the access opening.

The collar and arms can be raised or lowered on the mast and rotated to run brushes, cleaning jets, inspection cameras, or testing equipment, round the inside surface of the tank wall. The device is operated from inside the tank, or by remote or computerised control.

USE/ADVANTAGE - For maintaining large vessels in the food, chemical, and petrochemical industries. The equipment is operable without men having to enter a vessel containing toxic material or gases.

US 5503033A

A service apparatus suitable for use in servicing an internal wall of a large, stationary, round cylindrical container which has a narrow access opening only in a top thereof, the service apparatus including

an elongate chine having connection means for connecting the chine to an elongate suspension element for suspending the service apparatus in use within the container via said narrow access opening;

a plurality of radial arms, each arm having a radially inner end and a radially outer end, each arm being pivoted by its radially inner end to the chine to be pivotal between a collapsed condition in which each arm extends recumbently alongside the chine to allow the service apparatus to pass through the narrow access opening, and a deployed condition in which each arm extends generally radially away from the chine;

deploying means connected between the chine and the respective radial arms and being selectively operable to cause progressive pivoting of the arms between their collapsed conditions and their deployed conditions, and between their deployed conditions and their collapsed conditions;

stays connected between the respective arms and the chine to stay the respective arms against the chine such as to be able to support weight when the arms are in their deployed conditions; a roller mounted at the radially outer end of each arm by means of mounting means allowing each arm to be resiliently displaceable within limits to allow limited extension and contraction of each arm, the rollers being positioned generally on a circle diameter falling in a predetermined range of diameters to allow the rollers, in use, resiliently rolling to abut said internal wall to be serviced which internal wall is round having a diameter within said range of diameters, the rollers being arranged symmetrically around the chine to cause reaction forces of the wall on the rollers to be in balance.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	RMOC	Draw	Doc
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☐ 9. Document ID: SU 582961 A

L12: Entry 9 of 9

File: DWPI

Dec 25, 1977

DERWENT-ACC-NO: 1978-J5036A

DERWENT-WEEK: 197843 .

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TITLE: Remote controlled inspector for inaccessible surfaces - has annular nozzle round lens of inspection camera to allow simultaneous cleaning of surfaces

INVENTOR: SOLODOVNIK, V V

PRIORITY-DATA: 1976SU-2399672 (August 3, 1976)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
SU 582961 A	December 25, 1977		000	

INT-CL (IPC): B25J 19/00

ABSTRACTED-PUB-NO: SU 582961A

BASIC-ABSTRACT:

A remote inspector for inaccessible surfaces consists of a capsule (4) with a telecamera (5) and a drive system (1). The inspector is designed to give simultaneous cleaning of the inaccessible surface by incorporating a nozzle (7) with an even annular slot located concentrically with the camera lens.

The inspector is inserted by a manipulator or other means into the inside of the chamber or vessel to be inspected. The camera is then oriented by the drive (1) through the rack transmission (3), operated from a control panel. When the surface being inspected needs to be cleaned, a pressure fluid is fed through pipe (6) so that it emerges from the nozzle (7) in an annular stream through the nozzle slot which is, e.g. 0.4-0.5mm. wide. The location of the camera lens in the centre of the jet of cleaning fluid prevents dirt from getting into the camera's field of view and allows the surface to be cleaned as it is being inspected.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	RMOC	Draw	Doc
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Term	Documents
CLEANING	380492
CLEANINGS	293
(9 WITH CLEANING).EPAB,JPAB,DWPI,TDBD.	9
(L9 WITH CLEANING).EPAB,JPAB,DWPI,TDBD.	9

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